

III The Swedish Labor Market

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This section describes the main features of the Swedish labor market. The main trends in the labor market are first outlined, focusing on developments during the 1990s. This is followed by an evaluation of those labor market programs that distinguish the Swedish labor market from its main European partners. The impact of Sweden's wage bargaining system on competitiveness and long-run productivity is then analyzed. The section concludes with a discussion of the effect of labor market regulations on the flexibility of the labor market.

Recent Trends in the Labor Market

A distinctive feature of the Swedish labor market until recently was the very low rates of unemployment (Chart 3-1). The "open" unemployment rate averaged just over 2 percent in the 1980s. Even including the participants in labor market programs, Sweden's total unemployment rate in the 1980s averaged about 5½ percent—well below the European average. Moreover, high participation rates for both men and women accompanied the low unemployment rates (Chart 3-1). Sweden's favorable employment performance in the past—especially the participation rates for women—has been attributed to a combination of an expanding public sector and an extensive network of social benefits (Chart 3-2).

Sweden's worst postwar recession in 1990–93 fundamentally altered its favorable labor market performance. Open unemployment increased steadily, reaching over 8 percent in 1993, while the total unemployment rate rose to 13½ percent, as labor market programs expanded. The fall in employment during the recession was especially precipitous in manufacturing and construction (Chart 3-2). The decline in employment was accompanied by a substantial drop in participation rates, as discouraged workers either left the labor force or participated in labor market programs outside the labor force.

Rising unemployment has also altered other features of the labor market. In the past, a distinctive feature had been the relatively low levels of long-term unemployment—attributed to the success of

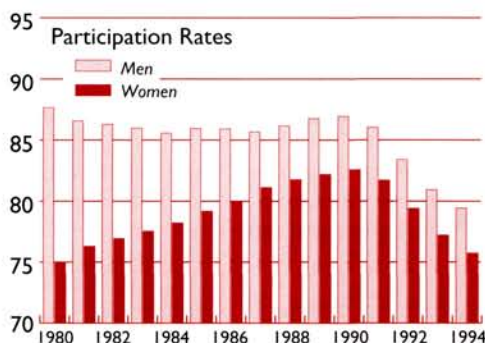
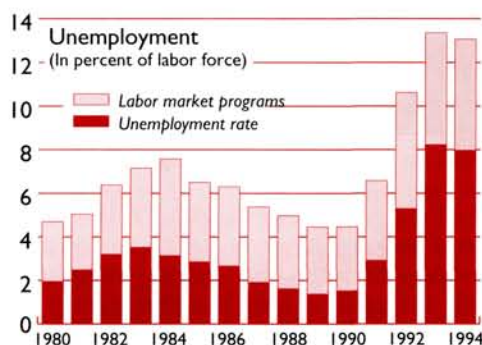
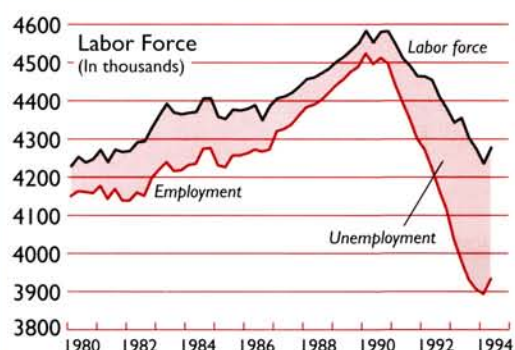
the labor market programs in preventing the demotivation and de-skilling of the unemployed. However, the recent crisis has seen a sharp increase in the long-term unemployed (defined as those unemployed for more than 26 weeks) from about 17 percent of the total unemployed at the start of the recession to 37 percent in the third quarter of 1994. As discussed more fully below, this steep increase in both unemployment and its structural component is likely to have a fundamental bearing on the viability of Sweden's unemployment compensation system, on labor market programs, and on the wage bargaining system.

The economic recovery that began in early 1993 has been accompanied by an upturn in employment (Chart 3-1). However, it has not had a major impact on the unemployment rate, as some of the discouraged workers and participants in higher education and training programs have returned to the labor force. Reflecting the export driven nature of the current recovery, manufacturing employment has risen sharply, although there has also been some increase in employment in the services sector (Chart 3-2). The increase in employment in services has been confined exclusively to the private sector, and partly reflects the contracting out of a number of services previously performed within the public sector. Employment in the public sector has continued to fall as attempts were made to consolidate the public finances.

Labor Market Programs

Swedish labor market programs, which have received much international attention, can be conceptually separated into a "passive" and an "active" component. The passive labor market program essentially consists of the unemployment insurance system. The active component covers programs to enhance matching between demand and supply of labor, to provide training, and to offer temporary jobs in public works as well as subsidies for employment. Sweden has incurred significant expenditures on sustaining these labor market programs, which

Chart 3-1. Labor Market Indicators

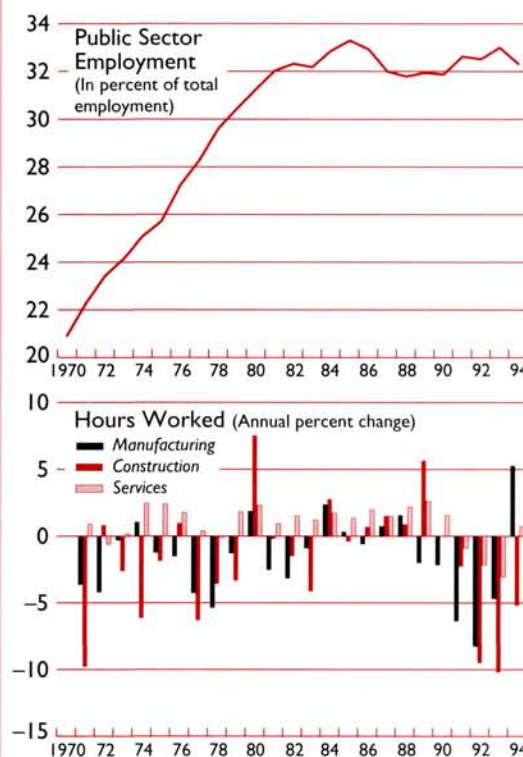


Sources: Statistika Centralbyrån, *Monthly Digest of Statistics*; and data provided by the Swedish authorities.

entailed total expenditure equivalent to 6 percent of GDP in 1993/94 (Table 3-1).

In the past, a preponderant part of labor market expenditures was concentrated on active labor market programs, reflecting the strong emphasis of labor market policy on retraining and providing temporary employment to prevent the demotivation of the unemployed. However, with the economy moving into

Chart 3-2. Public Sector Employment and Hours Worked



Sources: Statistika Centralbyrån, National Accounts; and data provided by the Swedish authorities.

a deep crisis from the second half of 1990, expenditures on unemployment benefits have risen relatively faster than those on active measures. This has been a consequence of both the sharp increase in unemployment and the effective limits on the number of people who can be provided with useful training. A detailed analysis of the various labor market programs is provided below.

Unemployment Insurance

The underlying principle of the Swedish unemployment insurance system is to offer generous benefits, but to keep the duration of the benefits relatively short. This is based on the premise that it is the duration of benefits rather than the size of the replacement ratio (defined as the ratio of unemployment benefits to wages) that has an adverse impact on the incentives to work. However, as discussed more fully below, in practice, the structure of the system allows

Table 3-1. Expenditures on Labor Market Programs
(In percent of GDP)

	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94
Total labor market programs	2.5	2.3	2.0	2.3	3.6	5.5	6.2
Unemployment compensation	0.7	0.6	0.5	0.6	1.2	2.3	2.7
Active measures	1.8	1.7	1.5	1.7	2.4	3.3	3.5

Source: Ministry of Labor.

the effective duration of benefits to be extremely long. This has become a source of particular concern as Sweden has moved from being a low unemployment to being a high unemployment society.

The payment of unemployment benefits is the responsibility of the 42 insurance societies, which have close ties to both the unions and the employer organizations. The overwhelming part of the Swedish labor force belongs to these insurance societies, which are financed almost in their entirety by payroll taxes. Employers are required to pay 2.16 percent of the total wage bill to the unemployment fund, while since January 1994, a mandatory fee of 1 percent of the wage is levied on all employees. In order to receive unemployment benefits from one of these societies, a person must have been a member for 12 months and worked for at least 80 days prior to claiming the benefits.¹ The unemployment benefit was as high as 90 percent of the insured person's previous income until July 1993, but with the onset of the fiscal crisis the level of unemployment benefits has been reduced to 80 percent of previous income. In addition, a waiting period of 5 days was introduced for receiving the benefits and the maximum value of the benefit has been set at SKr 564 a day.

Despite various modifications over time, the duration of unemployment benefits has, at least in theory, been kept relatively short. For workers under the age of 55, the maximum duration of benefits is 300 days, while workers over 55 can receive benefits for up to 450 days. However, in practice, it is possible for workers to receive benefits for sustained periods of

time by alternating between the active and passive components of the labor market programs. Since 1984, workers have had the right to get a temporary "relief job" when they have reached the end of the duration of receiving unemployment benefits. The temporary relief jobs normally last at least six months, which in turn qualifies the participant for receiving another round of unemployment benefits. In addition, since 1986 time spent on training programs makes the participant eligible for receiving a further round of unemployment benefits. This in effect implies that workers have the option of receiving one form of benefits or another almost indefinitely.

While it may have been possible to keep abuse of the system to a minimum in a situation of very low unemployment, this will be increasingly difficult at higher levels of unemployment. In 1993, an attempt was made to reform the system by setting a maximum limit of two years on the possibility of alternating between different labor market programs. However, this measure has been revoked by the newly elected Social Democratic Government. This places Sweden in the category of countries offering benefits in practice for an indefinite duration precisely at a time when the overall unemployment rate is very high.

Active Labor Market Programs

The main purpose of the active labor market programs is to preclude the emergence of structural unemployment and to minimize the economic and social costs associated with long-term unemployment. There are essentially three types of active labor market programs: (1) programs to enhance matching in the labor market; (2) programs to influence labor supply (primarily training); and (3) programs to influence labor demand (mainly temporary job-creation measures). Table 3-2, which provides a breakdown of the relative importance of the various labor market programs, indicates that the number of persons on training programs has risen to over 50 percent of total labor market program participation during the current crisis.

¹An unemployed person not belonging to any of the insurance funds receives a cash benefit of SKr 198 a day from the unemployment insurance system. The cost of the cash benefit system is paid for by the voluntary unemployment insurance system. Those not qualifying either for unemployment benefits or for cash benefits receive social benefits, paid largely by local governments. Currently, of the total unemployed, about 65 percent receive unemployment insurance, 5 percent receive cash benefits, and the other 30 percent rely on social benefits from the local governments.

Table 3-2. Breakdown of Labor Market Programs
(In percent of total labor market programs)

	1988	1989	1990	1991	1992	1993
Total labor market programs	100.0	100.0	100.0	100.0	100.0	100.0
Job creation	19.6	12.7	10.3	16.2	17.2	9.0
Recruitment subsidy	3.2	2.0	1.4	2.8	5.6	3.4
Relief work	8.9	6.7	5.5	6.1	6.4	5.2
Youth programs	7.6	4.0	3.4	7.3	5.2	0.4
Training	25.3	28.0	26.9	33.0	43.2	54.7
Measures for the disabled	53.2	56.7	60.7	48.0	34.0	31.5
Training replacements	—	—	—	0.6	3.2	3.7
University entries	—	—	—	1.7	—	—
In-plant training	1.9	2.7	2.1	2.2	2.4	1.1

Source: Ministry of Finance, *Sweden's Economy*.

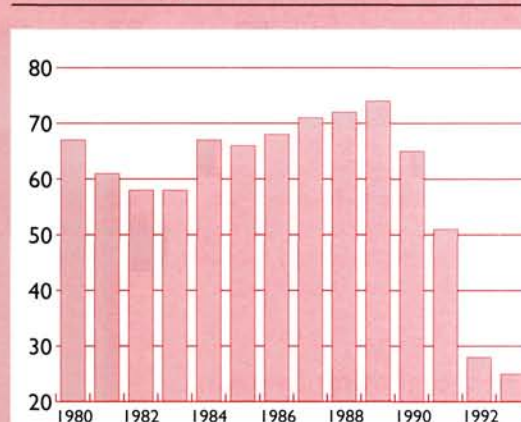
Of the active labor market programs, matching programs, which attempt to provide information and guidance to the unemployed about the availability of jobs, are the least controversial. There is a general consensus that they are beneficial. The Employment Service office is entrusted with the task of collecting information on vacancies and providing the information and counseling to potential job-seekers through an extensive network of job clubs. Employers are obliged to notify all vacancies to the Employment Service office, but since July 1993 private employment offices have also been permitted to operate in Sweden.

Centralized retraining schemes are the main instrument in Sweden for influencing the labor supply. Training programs typically last six months and consist primarily of vocational education, even though general education can sometimes also be a part of the training program. Training programs now encompass youth training, a new labor market measure introduced in July 1992, and work experience schemes, introduced in January 1993. Participants in training programs receive compensation at the same rate as unemployment benefits, and in fact are paid from the unemployment insurance funds. The costs involved in providing the training itself are borne by the central government. The Employment Offices are responsible for providing training, and they in turn contract out specific programs based on their assessment of market needs.

Training programs help the labor force to acquire the necessary skills and enhance the intersectoral allocation of labor when the economy is subject to rapid rates of structural change. This also keeps the effective labor supply from falling during periods of rapid technical change, which has the added benefit of moderating wage inflation from the supply side.

However, the effectiveness of centralized training programs has been called into question by recent evidence. Chart 3-3 shows that the percentage of participants securing employment within six months of finishing training has dropped from a high of over 70 percent in 1989 to about 25 percent in 1993. The cycle no doubt accounts to some extent for this sharp fall. However, the contrast with the 1980–81 recession, when the re-employment possibilities fell by a much smaller extent, suggests that the present low rate of re-employment arises mainly from structural factors. A plausible hypothesis, which is examined more fully below, is that centralized training pro-

Chart 3-3. Re-Employment After Training
(Percent of participants in training securing employment within six months after training)



Source: Data provided by the Ministry of Labor.

grams are less relevant at present because structural changes have made firm-specific training far more important for firms.

Labor market programs designed to influence the demand for labor typically consist of temporary relief work. Traditionally, relief work consisted of providing employment in the construction sector to the unemployed during cyclical downturns. However, more recently, relief work has been mainly concentrated in providing temporary employment in public services—particularly those connected with local governments. The relief job normally lasts for about six months, and the Government covers about 65 percent of the wage costs. The other part comes from the unemployment insurance funds. Even though relief work is remunerated at market wages, the cost of this program is much less than that incurred in centralized training schemes, since unlike training programs, there are no fixed costs in temporary employment.

The main idea behind relief work is to keep the unemployed actively involved and to preclude their stigmatization. In this sense, relief work has a supply-side effect, by preventing a fall in the effective supply of labor through discouraged workers dropping out of the labor force. However, the impact of relief work on wage inflation is fairly complex. As discussed more fully below, while relief work can have a dampening effect on wage inflation by enhancing the effective supply of labor, it can also have a wage-increasing impact by providing an effective guarantee of employment during cyclical downturns.

A further labor market measure, which affects labor demand, is recruitment subsidies. The Government covers about 65 percent of the wage cost for six months. Also, in order to facilitate new hiring, firms have been offered a 15 percent reduction in payroll fees in 1994 if they increased the number of their employees as of October 1993. While recruitment subsidies play a useful role in keeping the labor force active and while they might mitigate the problems of long-term unemployment to a certain extent, they can also be a source of inefficiency. In particular, during cyclical upturns employers may have an incentive to hire workers who receive subsidies. This can crowd out the employment possibilities of the nonsubsidized workers and hence be a source of allocative inefficiency.

Wage Bargaining System

Main Institutional Features

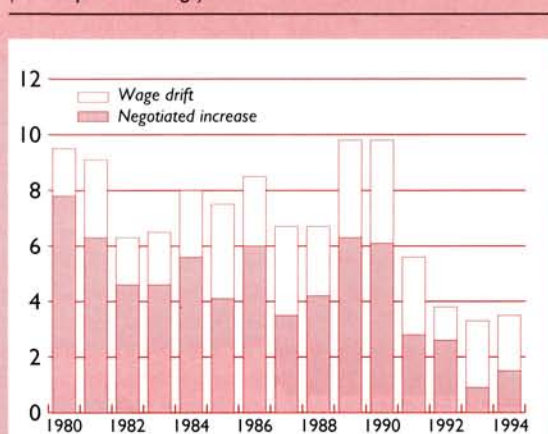
For a long time, wage negotiations in Sweden have been conducted between centralized trade

unions and a centralized employers' organization.² While centralized negotiations start off the wage bargaining process, the system also allows for "wage drift," whereby the centrally negotiated wages are subject to further increases through local negotiations at both the industry and plant level. Since the early 1980s, wage drift has become increasingly important, signaling a substantial weakening of the centralized bargaining system.

While some form of centralized wage bargaining is common to all the Nordic countries, the Swedish trade unions have been unique in pursuing an explicit policy of wage equalization as an important objective of the bargaining process. The idea of wage equalization was initially conceived as implementing the policy of equal pay for equal work. However, in the 1970s, the unions pursued a very aggressive policy of across-the-board wage equalization, paying little heed to the nature of the work performed.³ Consequently, by the early 1980s, Swedish wage differentials were substantially lower than in other OECD countries. Estimates provided in 1984 by the Swedish Ministry of Finance indicated that the wage spread for industrial workers, calculated as the difference between the highest and lowest deciles, was 34 percent for Sweden, compared with 210 percent for the United Kingdom and 490 percent for the United States. These differences in wage dispersion between Sweden and its major partners broadly continue to hold.

²There are three centralized unions in Sweden—one represents blue-collar workers (LO), one represents white-collar workers (TCO), and the third represents professional workers (SACO). Since almost 80 percent of Swedish workers are unionized, these centralized unions are truly encompassing and determine the wages for literally all workers. The employers are represented in the collective negotiations by the Swedish Employers Confederation (SAF).

³The main economic argument given by the trade unions for the strategy of equalizing wages was that it would promote a rapid rate of structural change through two distinctive channels. First, it would impose a high wage cost on low-technology sectors and inefficient firms by not giving them the freedom to lower wages. Hence, the low-productivity sectors would be forced to rationalize and become more efficient, or else they would have to go out of operation. In contrast, workers in the high-technology sectors would not be afforded the freedom by the centralized negotiation process to secure higher wages despite their relatively higher productivity. This would make it possible for the high-technology enterprises to generate relatively higher rates of profit that could be invested for faster growth. Over time, this policy of penalizing the low-productivity sectors and providing incentives for the high-productivity sectors would increase the share of dynamic, high-technology enterprises in total production. Since Sweden has traditionally been an economy with high average wages and labor shortages, the wage equalization policy was conceived as advantageous for rapidly transforming the technological basis of the economy and promoting high growth without hitting the labor supply constraint. For a fuller discussion of these issues, see Ramaswamy (1994).

Chart 3-4. Wage Earnings*(Annual percent change)*Source: Ministry of Finance, *Sweden's Economy*.

The wage bargaining process in Sweden has also had a distinctive strategy for maintaining competitiveness. The main idea was to have the traded goods sector setting the norm for wage increases for the rest of the economy. The wage increase in the competitive sector, or the sector exposed to foreign trade, was to be determined by the sum of international price inflation and the rate of productivity growth in that sector. This method of determining wage increases would maintain Swedish tradable goods prices on a par with those of its competitors. However, the policy of wage equalization adopted by the trade unions simultaneously dictated that an equal wage increase had to be given to workers in the nontraded goods sector. Since the rate of growth of productivity was relatively lower in the nontradable sector, the combination of the leading role assigned to the traded goods sector and the policy of wage equalization implied an inflationary bias in the nontradables sector.

Implications for Wage Inflation

The wage bargaining system described above has resulted both in high wage inflation and a slowing down of long-term productivity growth. The problem of high wage inflation was especially severe in the 1980s, as hourly earnings increased at an average annual rate of over 8 percent and peaked at 10 percent in 1990 (Chart 3-4). As a consequence of the high wage inflation in the 1980s, Sweden suffered a severe decline in its international competitiveness (Chart 3-5).

In principle, a system of centralized wage bargaining might be expected to have a moderating impact

on the rate of wage inflation, since the actions of a centralized union have a far greater impact on macroeconomic performance than the actions of an isolated decentralized union.⁴ In particular, if the centralized union pushes for too high a wage, there is likely to be an increase in the overall rate of unemployment, the cost of which the union membership would ultimately have to bear. In contrast, a decentralized union operating in isolation would not have to bear directly the adverse effects of its actions, as part of the costs are passed on to others. The fact that wage moderation did not materialize prior to the onset of Sweden's deepest recession in the early 1990s can be ascribed to three distinctive factors: (1) the multilevel bargaining structure; (2) the breakdown of the leading role assigned to the traded goods sector in the 1980s; and (3) the operation of labor market programs in conditions of very low unemployment.

Multilevel wage bargaining proved to be particularly problematic for maintaining Swedish competitiveness in the 1980s. Although a system in which the central union decides on an initial nominal wage increase that is compatible with a given final real wage target worked fairly well in the high international inflation environment of the 1970s, it did not do so in the environment of low productivity growth and low exogenous price inflation of the 1980s. To maintain a real wage target that would have been compatible with low unemployment in this environment would have required the centralized union to negotiate a negligible or even a negative nominal wage increase, because of the anticipated wage drift. However, such an approach would have created severe legitimacy problems for the union with its membership. Consequently, the central union bargained for a nominal wage increase that was warranted by neither the productivity performance nor the employment target. This, in turn, was followed by further wage increases at the industry and local level, leading to high wage inflation and a loss of competitiveness. High unemployment was avoided under these circumstances only by the large devaluations in 1981–82 and the massive expansion of the public sector in 1980s.⁵

The strategy of assigning the leading role to the traded goods sector in wage negotiations as a way of maintaining competitiveness broke down in the early 1980s. In 1983, the engineering workers broke off from centralized negotiations and concluded a separate wage pact. At the same time, workers in the

⁴See Organization for Economic Cooperation and Development (1993b and 1994b).

⁵See Lindbeck and others (1994). These arguments have also been put forward in detail in Lindbeck (1990) and Calmfors (1993a).

Chart 3-5. Competitiveness, Import Penetration, and Export Market Share

(Indices: 1985 = 100)



Sources: International Monetary Fund, *World Economic Outlook*; and IMF staff estimates.

nontraded goods sector (particularly in public services) started negotiating their wages without paying any regard to the implications for the competitiveness of the traded goods sector. Because the nontraded goods sector is not fully subject to market discipline, the wage demands in this sector were far too

high, and set off a spiral of competitive wage increases manifesting in high wage drift, which had an adverse impact on competitiveness (Chart 3-4).

The operation of labor market programs might also have had a wage-increasing impact. This contrasts with the traditional view that labor market programs reduce real wage growth and contribute to low unemployment. The traditional view is based on the argument that labor market programs—especially training programs and relief work—that help to avoid problems of de-skilling of the labor force and long-term unemployment, promote more effective competition for jobs and reduce upward pressure on wages. However, it would appear that at very low rates of unemployment, as prevailed in Sweden during much of the 1980s, the wage-reducing impact of labor market programs may cease to operate.⁶ In these circumstances, labor market programs could aggravate inflation by effectively providing the employed workers, or the “insiders” with the virtual guarantee of avoiding open unemployment, rather than enabling the unemployed “outsiders” to provide effective competition in the job market.

Implications for Productivity

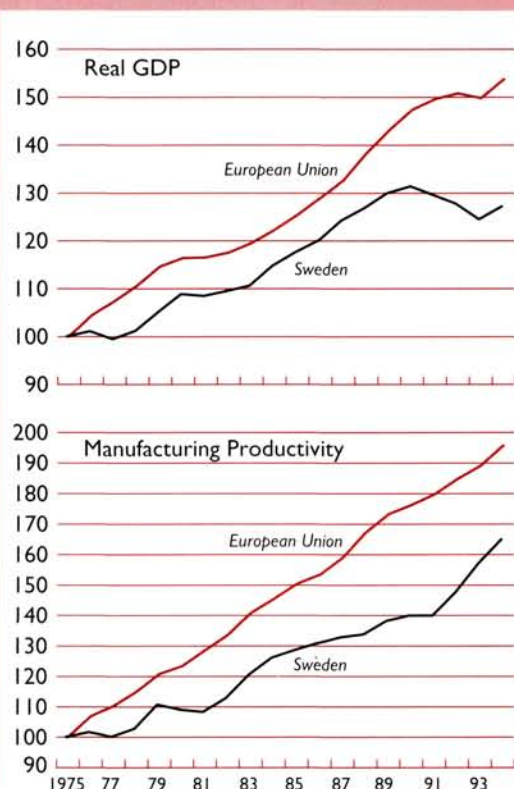
Chart 3-6 shows that the growth of both real GDP and labor productivity in manufacturing in Sweden has been lagging behind the European Union since the mid-1970s. A qualitative analysis of how specific features of the labor market might have influenced Sweden’s long-term productivity performance follows.

The strategy of equalizing wages to speed up structural change and productivity growth worked relatively well in the 1960s and the early 1970s, when Sweden had much to gain by shifting workers from the low-technology to the high-technology industries. However, by the mid-1970s, Sweden had successfully exploited this period of technological “catching up.”⁷ Henceforth, further increases in productivity could not be obtained simply by shifting workers between the different sectors of the economy through the policy of wage equalization. Instead, the main channel for increasing productivity growth had to come endogenously, by increasing the efficiency with which existing enterprises operated. This required that firms be given the freedom to restructure their enterprises, and to set the appropriate incentive mechanisms for motivating workers to enhance their human capital. However, the policy of compressing wage differentials denied firms the

⁶This view is forcefully put forward by Calmfors (1993b).

⁷See Hansson and Henrekson (forthcoming) and Henrekson, Jonung, and Stymne (1994) for a more detailed discussion of the catching-up hypothesis in the case of Sweden.

Chart 3-6. Output and Productivity Trends in Sweden and European Union
(Indices: 1975 = 100)



Sources: International Monetary Fund, *World Economic Outlook*; Statistiska Centralbyrån, *National Accounts*; and Organization for Economic Cooperation and Development, *Main Economic Indicators*.

flexibility to adapt their production structures and methods of organizing work and to vary their remuneration schemes substantially for the right kind of matching to occur. These problems were further compounded by new developments in the nature of technology and industrial structure toward increased diversity among individual firms.⁸

Sweden's centralized training schemes also proved to be inappropriate in the 1980s. Centralized

⁸These developments, involving the shift from standardized assembly line production to more flexible working practices, have been referred to in the literature (see Piore and Sabel (1984) and Milgrom and Roberts (1990)) as the shift from "Fordism" to "post-Fordism." A distinctive feature of post-Fordism is the increased diversity among firms. Organization along post-Fordist lines is said to have become increasingly important since the mid-1970s. Eliasson and others (1990) document some of these changes for Sweden.

schemes, by their very nature, impart mainly general skills, whereas the new technology required a much greater emphasis on firm-specific skills. However, in order to find it optimal to offer in-house training, firms require the freedom to devise their own internal wage differentials and promotion schemes to motivate workers both to enhance their human capital and to remain in the firm after acquiring the training. The rigidity imposed by the system of centralized bargaining and wage equalization precluded firms from tailoring their own remuneration schemes to enhance productivity.

Labor Contracts and Flexibility

An extensive set of government regulations in Sweden dictates the types of labor contracts that are allowed in practice.⁹ An important feature of these regulations is the stipulation of contracts of indefinite length as the norm for employment. There are also strict rules to be followed for redundancies and layoffs, with the principle of "last-in first-out" being the norm. The main purpose behind the regulations in the labor market was to increase job security and the general safety of workers.

The impact of these regulations on labor market flexibility can be tested by estimating equations of the labor adjustment process. In particular, one can estimate the sensitivity of employment to variations in output as well as the speed of labor adjustment with a dynamic demand for labor equation. Following Abraham and Houseman (1993), the labor adjustment equation can be written as

$$\ln E_t = \alpha + (1 - \lambda) \phi \ln Y_t + \lambda \ln E_{t-1} + \delta_1 t + \delta_2 t^2 + \varepsilon_t, \quad (1)$$

where E represents employment, Y represents output, t is a time trend, and ε is an error term. The parameter λ , which lies between 0 and 1, is inversely related to the speed of labor adjustment.

Table 3-3 presents the estimates of the parameters λ and θ for both the aggregate economy and in manufacturing, using two alternative definitions of labor input: employment and total hours worked. The parameter $(1 - \lambda)\theta$ shows the short-run sensitivity of employment to output and λ the speed of labor adjustment. The striking finding that emerges from estimating equation (1) is the extremely low sensitivity of total employment to aggregate output, with most of the adjustment coming through changes in hours worked. A similar pattern, though in less extreme form, also holds in the case of manufacturing. In fact, the persistence profile of employment in manu-

⁹See Lindbeck and others (1994) for details.

Table 3-3. Estimates of a Labor Adjustment Equation¹

	Employment 1980:Q1–1993:Q4	Total Hours 1980:Q1–1993:Q4
Aggregate economy		
$\phi(1 - \lambda)$	0.175 (3.61)	0.814 (8.36)
λ	0.889 (20.37)	0.237 (2.91)
Manufacturing		
$\phi(1 - \lambda)$	0.239 (4.87)	0.372 (4.11)
λ	0.942 (38.73)	0.605 (8.19)

¹T-ratios are in parentheses. Seasonally adjusted quarterly data for the period 1980:Q1 to 1993:Q4 were used.

facturing is relatively higher than for the aggregate economy.

The fact that the labor adjustment process in Sweden, according to the regression results, is relatively inflexible has a number of adverse consequences for the economy. First, in conditions of fluctuating product demand, labor market regulation on the nature of contracts can preclude firms from making adequate adjustments in employment. This makes firms incur relatively high effective fixed costs and erodes their capacity to compete externally. Second, it slows

down the intersectoral allocation of labor, thereby adversely affecting productivity growth. While these regulations had their origins in attempts to prevent the segmentation of labor markets, they can at times have adverse supply-side effects that reduce the flexibility for workers.¹⁰

The principle of last-in first-out in the case of layoffs and redundancies is increasingly proving to be a source of inflexibility in the Swedish labor market. The main advantage of consistently following this rule is that it removes the stigma effect on the laid-off worker and enhances the worker's re-employment possibilities since the dismissal is associated with systemic rather than personal factors. However, the principle of last-in first-out can make it difficult for employers to retain workers whom they consider valuable. While this may not overly create problems in the case of traditional factory production, these regulations can be extremely damaging to smaller firms that are highly sensitive to the quality of human capital. In this case, labor market regulations may force them to lay off younger workers who may be most crucial to the production process.

¹⁰For instance, limited possibilities for obtaining temporary or part-time contracts make it difficult for young people to combine studies with work, or use part-time jobs to undertake more effective search for suitable work. Also, firms cannot make use of temporary employment to screen workers before offering permanent contracts. If, as was argued earlier, recent technological developments make human capital an increasingly crucial ingredient in the production process, legal constraints placed on the capacity of firms to sort and match workers can have an adverse impact on productivity growth.